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10/713,237	11/13/2003	Hormuzd M. Khosravi	5038-335	1182

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EXAMINER

BENGZON, GREG C

ART UNIT	PAPER NUMBER
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2144

MAIL DATE	DELIVERY MODE
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11/26/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/713,237

Applicant(s)

KHOSRAVI ET AL.

Examiner

Greg Bengzon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4 and 7-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-4,7-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

This application has been examined. Claims 1,3-4,7-24 are pending. Claims 2, 5-6 are cancelled.

Making Final

Applicant's arguments filed 10/02/2007 have been fully considered but they are not persuasive.

The claim amendments regarding -- 'a control plane protocol module; a control point, wherein the control point is one of a control plane to implement a core functionality of the control plane protocol module, or a forwarding plane to implement a portion of the control plane protocol module that is separated from the core functionality' -- do not overcome the disclosure by the prior art as shown below.

The Examiner presents new grounds for rejection as necessitated by the claim amendments and thus making this action FINAL.

Priority

The effective date of the claims described in this application is November 13, 2003.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 recites '*an application programming interface in accordance with the Network Processing Forum.*'

Claim 8 rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that it fails to point out what is included or excluded by the claim language.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,3-4,7-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Everdell (US Publication 2002/0165961) further in view of Crump (US Patent 6999454).

Everdell disclosed (re. Claim 1) a network device, comprising:

a control plane protocol module (Everdell-Paragraph 166, 'master control driver MCD', Paragraph 577, 'Master SRM')

a control point (Everdell-Paragraph 8, 'each distributed processor within the network device') wherein the control point is a control plane (Everdell-Paragraph 10, Paragraph 145) or a forwarding plane (Everdell-Paragraph 153)

an infrastructure module resident on the control point constructed and arranged to allow the control point to connect and exchange information with other control points; (Everdell-Paragraph 10, Paragraph 145) and a communication library resident on the control point (Everdell-Paragraph 109, Paragraph 125, 'API') constructed and arranged to provide information to the control point about control plane protocol modules on the current control points. (Everdell-Paragraph 6)

Everdell disclosed a network device having a distributed architecture may include an internal out-of-band control plane. Each of the distributed processors is connected to the out-of-band control plane, and the processors use the out-of-band control plane to transmit control information.

However Everdell did not disclose (re. Claim 1) implementing a portion of the control plane protocol module that is separated from the core functionality.

Crump disclosed (re. Claim 1)) implementing a portion of the control plane protocol module that is separated from the core functionality. (Crump-Figure 8, Column 4 Lines 55-65, 'The control plane is split into box management control functions and routing control functions.', Column 6 Lines 55-65)

Everdell and Crump are analogous art because they present concepts and practices regarding the separation of network management control functions. At the time of the invention it would have been obvious to a person of ordinary skill in the networking art to combine Crump into Everdell. The motivation for said combination would have been to improve router scalability with respect to the control plane. (Crump-Column 6 Lines 35-40)

Everdell-Crump disclosed (re. Claim 3) a worker control plane protocol module. (Everdell-Paragraph 577, 'local resiliency managers LRM')

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Everdell-Crump disclosed (re. Claim 4) a controller control plane protocol module.

(Everdell-Paragraph 166, *'master control driver MCD'*, Paragraph 577, *'Master SRM'*)

Everdell-Crump disclosed (re. Claim 7) the infrastructure further comprising at least one standardized application programming interface. (Everdell-Paragraph 109)

Everdell-Crump disclosed (re. Claim 8) the application programming interface further comprising an application programming interface in accordance with the Network Processing Forum. (Everdell-Paragraph 109, Paragraph 125, *'API'*)

Everdell-Crump disclosed (re. Claim 9) the infrastructure module further comprising a namespace to allow registration of components of the infrastructure module. (Everdell-Paragraph 110, Paragraph 146)

Everdell-Crump disclosed (re. Claim 10) the infrastructure module further comprising a control plane protocol module registration module and a packet redirection module. (Everdell-Paragraph 110, Paragraph 112, Paragraph 146)

Everdell-Crump disclosed (re. Claim 11) the infrastructure module further comprising a binding and discovery module (Everdell-Paragraph 483) and a transport module to allow the infrastructure module to communicate with other infrastructure modules on other network devices. (Everdell-Paragraph 10, Paragraph 145)

Everdell-Crump disclosed (re. Claim 12) the communication library further comprising a peer control plane protocol module application programming interface. (Everdell-Paragraph 557, '*separation of the data plane (device drivers) and control plane applications) results in the device drivers being peers of the applications.*'))

Everdell-Crump disclosed (re. Claim 13) the communication library further comprises a messaging layer. (Everdell-Paragraph 109)

Everdell-Crump disclosed (re. Claim 14) the communication library further comprising a transport abstraction layer to handle interconnection and transport protocols. (Everdell-Paragraph 161)

Everdell-Crump disclosed (re. Claim 15) a system, comprising: a control plane having a control plane processor; at least one forwarding plane having a forwarding plane processor; a backplane to provide connectivity between the control plane and the forwarding plane; (Everdell-Paragraph 146, '*client out-of-band management channel* ') and an infrastructure module resident on the control plane and the forwarding plane constructed and arranged to manage the connectivity between the control plane and the forwarding plane.

Everdell-Crump disclosed (re. Claim 16) the system further comprising a communication library resident on the control plane and the forwarding plane (Everdell-Paragraph 109, Paragraph 125, 'API') to communicate with the infrastructure module to obtain information about control plane protocol modules and to setup connections with the control plane protocol modules.

Everdell-Crump disclosed (re. Claim 17) the control plane further comprising a controller control plane protocol module. (Everdell-Paragraph 166, '*master control driver MCD*', Paragraph 577, '*Master SRM*'))

Everdell-Crump disclosed (re. Claim 18) the forwarding plane further comprises a worker control plane protocol module. (Everdell-Paragraph 577, '*local resiliency managers LRM*'))

Everdell-Crump disclosed (re. Claim 19) a method of distributing processing in a network device, comprising: defining controller and worker control plane protocol modules (Everdell-Paragraph 8, '*each distributed processor within the network device*') wherein the controller control plane protocol module implements a core functionality of a control plane protocol module on a control plane, and wherein the worker control plane protocol module implements a portion of the control plane protocol module that is separated from the core functionality on at least one forwarding plane; (Crump-Figure 8, Column 4 Lines 55-65, '*The control plane is split into box management control functions and routing control functions.*', Column 6 Lines 55-65)

developing corresponding entries in a communications library; (Everdell-Paragraph 109, Paragraph 125, '*API*') implementing an infrastructure module, the communication library and the controller module on a control plane; (Everdell-Paragraph 6) and implementing the infrastructure module, the communication library and the worker modules on a forwarding plane. (Everdell-Paragraph 153)

Everdell-Crump disclosed (re. Claim 20) defining a controller and worker control plane protocol modules further comprising providing interfaces between the controller and worker modules. (Everdell-Paragraph 109, Paragraph 125, '*API*'))

Everdell-Crump disclosed (re. Claim 21) developing corresponding entries in a communications library further comprising developing instructions that, when executed, cause the controller and worker control plane protocol modules to communicate.

(Everdell-Paragraph 146, 'client out-of-band management channel')

Claims 22-24 (computer readable instructions) are rejected on the same basis as Claims 1-21.

Response to Arguments

Applicant's arguments filed 10/02/2007 have been fully considered but they are not persuasive.

The Applicant presents the following argument(s) [*in italics*]:

... Everdell's master SRM and local resilient manager LRM perform the same functions but with different level of abstractions, not different functions as recited in claim 1, namely "the core functionality of the control plane protocol module and the portion of the control plane protocol module that is separated from the core functionality." With respect to Everdell's MCD, neither the relevant paragraphs cited by

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the Examiner nor elsewhere does Everdell mention or imply that Everdell's MCD implements "a core functionality of the control plane protocol module," while offloading the portion separated from the core functionality to the slave and/or local resilient manager.

The Examiner respectfully disagrees with the Applicant. The Examiner notes that while there is a possibility of overlapping functionality between the master SRM and LRM, it would have been obvious to a person of ordinary skill in the networking art that given the management hierarchy the two entities are not performing the exactly same functions, such that the master SRM is offloading some functionality to the LRM.

However in an effort to expedite prosecution the Examiner presents prior art by Crump which presents control and forwarding planes, wherein *the control plane is split into box management control functions and routing control functions.*

Conclusion

Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures

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may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

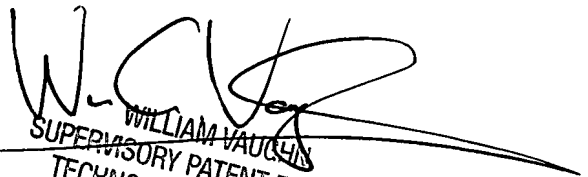
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Bengzon whose telephone number is (571) 272-3944. The examiner can normally be reached on Mon. thru Fri. 8 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Vaughn can be reached on (571)272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

gcb


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